DOCUMENT RESUME

ED 432 751 CS 013 695

AUTHOR Corso, Marjorie
TITLE Children Who Desperately Want To Read, but Are Not Working at Grade Level: Use Movement Patterns as "Windows" To Discover Why. Part III: The Frontal Midline.
PUB DATE 1999-09-00
NOTE 11p.; For Part I, see ED 402 549; for Part II, see CS 013 652; for Part IV, see CS 013 696.
PUB TYPE Reports - Research (143)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Child Development; Elementary Education; Longitudinal Studies; *Neurological Impairments; *Physical Development; *Physical Education; Preschool Education; *Reading Difficulties

ABSTRACT

A longitudinal research study observed 30 children between the ages of infancy and elementary age to determine if using large muscle motor patterns to master the three identified midlines that concur with the body planes used in anatomy is reflected in academic classroom learning levels. This third part of the study focused on the frontal midline. Results indicated that there was consistency between the four sources of data: (1) pre-kindergarten demographic data records reported by the parents; (2) the children's report cards analysis given by the teacher; (3) the physical education teacher's evaluation of the skill levels of the children; and (4) the parents evaluation of neurological development as specified by a given book. Findings suggest that these children tend to be mixed eye/hand dominant or left-hand dominant, and reports that these children appeared to prefer to move backward. The paper suggests activities to aid these children in overcoming their difficulties. (SC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 432 751

Children who desperately want to read, but are not working at grade level: Use movement patterns as "windows" to discover why.

Part III

The Frontal Midline

Marjorie Corso, Ed.
INSIGHTS TO SCHOOL READINESS
1933 County Road 782
Woodland Park, CO 80863
e-mail marjoriecorso@hotmail.com

CS 013 695

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☒ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

M. Corso

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Children, who desperately want to read, but are not working at grade level:
Use movement patterns as "windows" to discover why

Marjorie Corso, Ed.D

Part III

Frontal Midline

This is a discussion of a longitudinal study comparing developmental movement levels and the academic learning levels in young children. The purpose of this research was to determine if using large muscle motor patterns to master the three identified midlines is reflected in academic classroom learning levels. The three midlines studied were: sagittal, transverse, and frontal midlines. These midlines were chosen because they concur with the body planes used in anatomy. (VanDeGraaf, 1984)

The relationship between movement education and academic education is based on the assumption that both realms of learning are dependent on the adequate development of the brain and the nervous system.

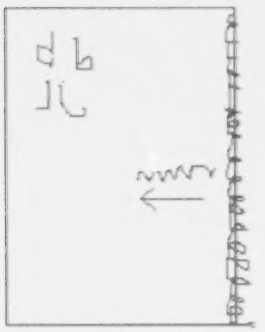
The focus of Part III is on the frontal midline. The concept of body-space awareness is that the frontal midline divides the front of the body from the back of the body. This body-space awareness is observed in the direction in which the body is moving.

In paper-space awareness, the frontal midline divides the front of the paper from the back of the paper, but is recognized, also, as the direction the letters and/or the sentence is read or written.

Body-space Awareness

The frontal midline divides the body-space and paper-space into front and back.
It refers to the direction that the body or letters are facing.

Paper-space Awareness



This study suggests that children who have not mastered moving their body forward and backward through their personal space, have letter reversals when reading and writing. They, also, may attempt to read, write and/or draw from the right margin of the paper-space or consistently use the back of the paper.

Description of participants

This was a longitudinal research study. It documented the developmental movement levels and the academic learning levels of the participants every 6 months for five years. The attrition rate was 4 participants of 30. Four newborn participants were added since the beginning of the study.

At the beginning of the study, eleven participants were age infancy to four years old. Seventeen participants were elementary age. Two participants were 5 years old.

The experimental group of participants was selected for the study because they were not working at grade level in the academic classroom nor in the physical education class. They did not qualify for learning disability services. There was no medical or no known prenatal explanation. The students had loving and supportive parents. These children were described as a "mystery" and a "worry" by their parents and teachers.

The control group was selected because they were working at or above grade level in the academic classroom and had mastered the movement skills in physical education classes as described by Gallahue, (1993). Most of these children were siblings of the participants in the experimental group in order to investigate any environmental influences.

Review of the academic classroom

Academic learning traditionally uses the sensory pathways of the brain and nervous system to expose children to knowledge. The knowledge is stored in the brain. The knowledge is mastered when the children can reproduce the knowledge through the small muscle movements used in reading and writing, or by verbally communicating some indication that the knowledge has been learned and understood. As these motor patterns become automatic the children are considered to be learning to read, write, spell, and perform math skills at their highest potential.

A problem occurs when the children can not communicate through the fine motor skills (reading, writing, or verbally) that the knowledge has been learned. Is the knowledge stored in the brain but the motor neurons are not developed enough to allow the child's fine motor skills to communicate the knowledge? Or are the two hemispheres of the brain not communicating efficiently?

Paul Dennison, Educational Kinesiology Foundation, stated,

> Many children know the material they have been taught but struggle to say or do what they remember. They can't get their knowledge out of storage very well. In this case, children have poor integration between the back

part of the brain, where thoughts are stored, and the front part where they are expressed.

Review of the physical education classroom

Movement education, also, uses the sensory pathways of the brain and nervous system to expose the children to knowledge. However, the learning levels can actually be observed through large and small muscle movement patterns. The teacher can visually evaluate the developmental levels of the children and can choose the methods of teaching needed to help the children's learning processes.

(Refer to Part II, The Transverse Midline, p. 3)

The parallel

To establish a parallel, the data was collected from four independent sources:

(1) Pre-Kindergarten demographic data completed by the parents including information recorded in the children's baby books.

(2) The children's report cards were evaluated for the first and fourth quarters of each school year. This data was provided by the classroom teacher.

(3) The locomotor and manipulate skills were videotaped the first and fourth quarter of each school year. The physical education teacher evaluated the skill levels of the children.

(4) The parents were provided a copy of A New Start for the Child with Reading Problems: A manual for parents, by Carl H. Delacato (1992). The parents evaluated the neurological development of their children as directed by the book.

Every six months the data were studied for consistencies between the four sources.

This study found consistencies between the four sources. The academic teachers reported a problem with the students recalling material. There were consistent reversals with writing or printing letters that began with a straight vertical line, such as b and d.

Some primary teachers reported that very young and immature children had a tendency to begin to draw or write from the right side of the paper-space. These teachers, also, observed that the children preferred to stand in line backward and sit in their chairs backward.

Furthermore, the primary teachers recorded a behavior problem with these children constantly getting out of their chairs and roaming around the classroom. However, if permitted, these children preferred to lie on their backs on the floor with the books held high while reading.

The movement educator reported that these children appeared to prefer to move backward. For example, the children found it much easier to move sit-scooters backward, to walk backward on a balance beam, to stand in line backward, and they have a tendency to go clockwise in a circle when the majority of the class is going counterclockwise.

What should academic classroom teachers look for?

(1) Printing letters backward consistently. This habit seemed to relate to the letters in the alphabet that begin with a straight vertical line. For example, b, d, h, j, n, r and p were consistently printed backward and, when reading, were pronounced with a different sound, i.e., b for d.

This study, also, suggests that these children tended to be mixed eye/hand dominant or left-hand dominant. The children who were left-handed with reversal

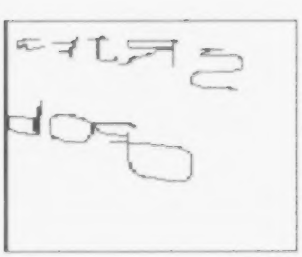
problems tended to have a "significant" parent(s) and/or a kindergarten or a first grade teacher who was right-handed.

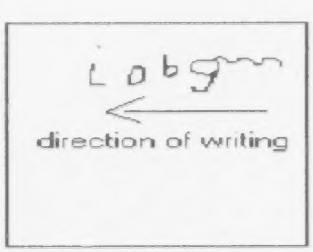
This may suggest that living in a right-handed society is detrimental to these children. From birth until kindergarten, parents and teachers should always make a habit of placing utensils and other learning tools in the middle of the high chair or desk so that the child can decide which hand to use. If the child seems to be left-handed, then all skills must be demonstrated for him left-handed. Teachers and parents may find demonstrating skills left-handed difficult, however, it will help the child master the skills with much less difficulty.

(2) Children, who have problems crossing the frontal midline, tended to draw a happy face upside down and some of the older participants could write a full sentence backwards in cursive.

It was observed as being perfectly natural for these children, when sitting face to face with their teacher, to draw a happy face upside down. When questioned, the children stated that they wanted it to look good for the teacher or they would respond by redrawing the happy to face themselves. Either response seemed to be perfectly logical to the child.

Writing Samples





What should movement educators look for?

(1) These children cannot gallop with a mature pattern. (Gallahue, 1993) They most commonly run with a little limp that picks up the rhythm of a gallop. They consistently lead with one leg and do not acknowledge the frontal midline. To acknowledge the frontal midline, the back leg should never pass the front leg.

These children can not change the lead leg in motion. They stop and think about what leg that they were using and then begin to gallop again.

(2) When sitting on a sit-scooter, these children cannot alternate their feet as a mode of power when moving forward. They are most commonly observed using both legs at the same time in an ackward looking movement.

However, these children consistently use a mature motor pattern by alternating their feet for propulsion when moving backward.

(3) When kneeling on a scooter, the children have the same problems alternating their arms while moving forward. They use a mature motor pattern when pushing the scooter backward.

(4) When lying on the scooter in a prone position, they use both arms at the same time to move forward and/or they use both legs at the same time. This pattern looks like the movement of a frog swimming. They do not alternating their arms and legs as observed in a creeping pattern.

(5) These children do not step forward in a mature motor pattern when performing an overhand throw, underhand throw, or racquet strikes or kicking a ball. They are observed not having any movement of the legs or transfer their weight on to the wrong foot.

If the child is right handed, he should transfer his weight forward onto his left leg.

(6) The children have difficulty moving forward or backward to catch a ball. They also tend to catch the ball against their body. This "basket catch" is an immature motor pattern.

Sponge activities to use in the classroom and the gymnasium

(1) Asked children to make the form of a letter or number with their body. Ask them if they can form the letter or number by themselves or if they need another person to complete the number or letter. Spend more time reviewing and making letters that they reverse when, i.e., b, d, n, r. It is important to remember that big, exaggerated letters and movements are needed for practice.

(2) Ask the children to form the numbers and letters with their hands. Teaching the children the American Sign Language alphabet and using it in "silent spelling" helps these children to express their knowledge.

Children, who desperately want to read, but are not working at grade level:
Use movement patterns as "windows" to discover why

Marjorie Corso, Ed.D

Part IV

Crossing All Three Midlines Automatically

The physical educator observes the locomotor, manipulative, and nonlocomotor skills as performed in a mature motor pattern with little thought or effort.

The academic classroom teacher evaluates the children working at or above grade level with little effort.